

ABSTRACT

An α -glucan phosphorylase having improved thermostability, which obtained by modifying natural
5 α -glucan phosphorylase, and a method for producing this α -glucan phosphorylase having improved thermostability are provided. The natural α -glucan phosphorylase is derived from a plant, this α -glucan phosphorylase having improved thermostability has an amino acid residue which is different
10 from that of the natural α -glucan phosphorylase in at least one position selected from the group consisting of a position corresponding to position 4 in a motif sequence 1L or 1H, a position corresponding to position 4 in a motif sequence 2, and a position corresponding to position 7 in a motif
15 sequence 3L or 3H, and wherein the enzyme activity of α -glucan phosphorylase having improved thermostability at 37°C, after heating in a 20 mM citrate buffer (pH 6.7) at 60°C for 10 minutes, is 20% or more of the enzyme activity of the α -glucan phosphorylase having improved thermostability at 37°C,
20 before heating.